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business process interdependent to the business process in which the discontinuance was detected by the status watcher.

REMARKS

Claims 1-2, 4-7 and 8-20 are pending in this application. Claims 1, 5 and 12 have been amended in several particulars for purposes of clarity and brevity that are unrelated to patentability and prior art rejections, while Claims 17-20 have been newly added, in accordance with current Office policy, to further and alternatively define Applicants' disclosed invention and to assist the Examiner to expedite compact prosecution of the instant application.

In response to the Request for Continued Examination (RCE) filed on August 14, 2002, the Examiner has restated, what seems to be, the rejection of all pending claims 1-2, 4-6 and 8-16 under 35 U.S.C. §103(a) as being unpatentable over Flores, U.S. Patent No. 6,073,109, as modified to incorporate selected features from the previously cited reference, Reid et al., U.S. Patent No. 5,892,449 for reasons stated on pages 7-19 of the Office Action (Paper No. 13) dated on November 4, 2002. However, there is some confusion as to the nature of the rejection and the claims as rejected. For example, on page 7 of the Office Action (Paper No. 13), the Examiner first cites the quotation of 35 U.S.C. §103(a), but then rejects claims 1-2, 4-6 and 8-9 for lack of novelty under 35 U.S.C. §102(e), rather than 35 U.S.C. §103(a). Moreover, the claims rejected under 35 U.S.C. §102(e) include claims 1-2, 4-6 and

8-9, and not claims 10-16. Therefore, the Examiner is requested to clarify both the nature of the rejection and the claims as rejected.

Nevertheless, for purposes of completeness, Applicants will assume that all claims 1-2, 4-6 and 8-16 as pending in this RCE application are rejected under 35 U.S.C. §103(a) and not 35 U.S.C. §102(b) as incorrectly identified in the Office Action (Paper No. 13).

Turning now to the substance of the rejection of claims 1-2, 4-6 and 8-16 presumably under 35 U.S.C. §103(a), the Examiner has repeated *verbatim* the same rationale provided in the final Office Action (an incorrectly labeled Paper No. 1) issued on March 14, 2002. Basically, the Examiner asserts that Flores '109, as a primary reference, discloses essentially all the claimed elements, except for the detection of an occurrence of an abnormal status change in one of the plurality of related business processes which is allegedly disclosed on column 6, lines 45-59 of Reid '449, as a secondary reference.

As previously presented in the Response After Final filed on July 15, 2002, Applicants respectfully submit that the Examiner's assertions are incorrect. The Examiner is reminded that, in order to establish a *prima facie* case of obviousness under 35 U.S.C. §103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. These basic criteria are required in addition to the assessment of Applicants' claimed invention as a whole. The teaching or

suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and **not** based on Applicants' disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2143. In other words, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USQP 494, 496 (CCPA 1970).

In the present situation, the Examiner has not treated the claim invention as a whole, failed to establish that the cited prior art references, including Flores '109 and Reid '449 disclose all the key limitations of Applicants' claims 1-2, 4-6 and 8-16, and failed to provide any suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify Reid '449 into Flores '109 in order to arrive at Applicants' claims 1-2, 4-6 and 8-16. Therefore, Applicants respectfully traverse the rejection for reasons discussed below, and also for purposes of completeness, address the Examiner's responses to Applicants' previously submitted arguments stated on pages 2-7 of the Office Action (Paper No. 13) *seriatim* herein below.

I. Traversal to Examiner's rejection stated on pages 7-19, Paper No. 13

As previously explained, the present invention is directed to a workflow management method and a workflow management system including a plurality of client computers and a method as shown in FIGs. 1, 11 and 15 in which some of related business processes in a business flow (business procedure) may be executed simultaneously by the plurality of client computers. The purpose of the

present invention is to notify clients of the occurrence of an abnormal status change (discontinuance) detected in one of a plurality of related business processes which are executed simultaneously so as to avoid execution unnecessary or useless business processes as described on page 3 of the specification and the summary of the invention.

Independent claim 1, as amended, defines a workflow control method in a workflow system connected to a plurality of client computers for carrying out business procedures each comprising a plurality of related business processes, and at least one of the business procedures being allowed to execute some of the related business processes simultaneously comprising the steps of:

detecting occurrence of abnormal status change in one of a plurality of related business processes;

selecting at least one user who is in charge of a business interdependent to the business process in which said abnormal status change was detected; and

notifying a client computer corresponding to said selected user of the occurrence of abnormality in the related business process so as to prevent the selected user from executing the interdependent business process.

As defined by Applicants' independent claim 1, when one of a plurality of related (or interdependent) business processes is discontinued or canceled while some of the plurality of related business processes are being executed simultaneously, unnecessary or useless business processes can advantageously be avoided or prevented by way of informing the relevant users of the occurrence of the discontinuance or interruption detected in the related business process, see lines 10-20, page 17 of the specification.

In contrast to Applicants' claim 1, Flores '109 discloses a computerized method and system as shown in FIG. 2 for managing business processes using a number of workflows linked together as shown in FIG. 1. The purpose of the Flores workflow system is to (1) notify the user that s/he has a step to begin or to complete the workflow; (2) provide the user with the proper tools to complete a task; (3) provide the user with the proper information to complete a task; (4) allow the user to see where a task fits in the overall process; (5) manage proper reminders, alerts, and follow-ups to keep the processing moving; (6) automate standard procedures; (7) integrate with the organization's existing business systems; (8) provide application program interfaces that allow developers to develop applications that are workflow-enabled.

According to Flores '109, a follow-up manager is utilized to perform the functions as described, including, for example, notifying the user that he or she has a step to begin or to complete, and issuing reminders, alerts and follow-ups with respect to an overdue commitment (delayed task) in order to hasten the user to complete the delayed task, see column 13, lines 39-53.

However, Flores' follow-up manager does **not** have the function of issuing a notification for informing a user that one of his tasks (i.e., business processes) should be interrupted because its interdependent process has been already discontinued.

In addition, Flores '109 does **not** intend to perform a plurality of related (or interdependent) business processes simultaneously in a business procedure and to prevent relevant users from executing unnecessary or useless business processes when one of related business processes is discontinued or interrupted by a relevant

user.

Nevertheless, on pages 7-8 of the Office Action (Paper No. 13), the Examiner cites column 4, lines 30-34 and column 13, lines 39-67 of Flores '109 for disclosing the feature of "notifying a client computer corresponding to said selected user of the occurrence of abnormality in the related business process" as defined in Applicants' claim 1. However, the cited portion of Flores '109 discloses any function of issuing a notification to inform a user that one of his/her tasks (business processes) should be interrupted because its interdependent process has been already discontinued as defined in Applicants' independent claim 1. In fact, the cited column 13, lines 39-67 of Flores '109 only describes the follow-up manager as being used to determine if there is a delayed transaction. Nowhere in Flores '109 is there disclosure of any detection of an abnormal status change (discontinuance) in the business process as alleged by the Examiner.

Reid '449, as a secondary reference, does **not** disclose what the Examiner has alleged, that is, "detecting an occurrence of an abnormal status change in one of the plurality of related business processes". This is because Reid '449 only relates to an electrical distribution system for controlling and monitoring of remotely controlled circuit breakers, and this system has **no** relation to a workflow system as disclosed by Flores '109.

Specifically, as shown in FIG. 3, column 6, lines 25-59, Reid '449 sends a read status message and a switch command message from a microprocessor 72 of an interface module 24 to an interface driver board 34, which includes a gate array 60 and being indicated as an area surrounded by a dot line in FIG. 3. (The microprocessor 72 receives the above commands from a controller 32). In response

to these messages, the interface driver board 34 reads the status of a circuit breaker and returns the results to the microprocessor 72. When a switch command message is issued, the interface driver board 34 switches a designated circuit breaker and after that, reads the status of the circuit breaker. The microprocessor 72 uses the returned information to ascertain whether the selected circuit board is in a correct state or not. If the circuit breaker is in a wrong status, the microprocessor 72 attempts to correct the problem (perhaps, retransmits the same command again in response to a controller command from the controller 32).

Nevertheless, the Examiner cites column 2, lines 46-59 of Reid '449 for allegedly disclosing "detecting an occurrence of an abnormal status change in one of the plurality of related business processes". However, the cited column 2, lines 46-59 of Reid '449 only refers to the situation "if a controller command is retransmitted multiple times and unexpected status is received from the gate array 60, the controller 32 may be programmed to display the error and may discontinue transmitting the command". In this case, an abnormal status change is detected.

However, this type of abnormal status change only refers to the type of machine trouble. In particular, Reid '449 refers to display an error message on a monitor (keyboard and display 55) when one of circuit breakers is out of order. According to Reid '449, every abnormal status change (machine trouble) is notified (displayed) to the same station (controller 32). Reid '449 simply does **not** disclose any "detecting an occurrence of an abnormal status change (user actions such as discontinuance or interruption) in one of the plurality of related business processes [occurred in a client computer to relevant user who is in charge of the related business process]". As a result, even if Reid '449 were to be incorporated into the

workflow process of Flores '109 in the manner suggested by the Examiner, the proposed combination would not arrive at Applicants' claimed invention. Instead, the proposed combination would arrive at a workflow system having a function of displaying an error message on the observer display thereby to notify a system manager of an abnormal client computer in which a hardware/software trouble has occurred.

With respect to independent claims 5 and 12, the Examiner has admitted that Flores '109, as a primary reference, does **not** disclose the use of a status watch for detecting a change in a business process being executed. However, the Examiner cites column 6, lines 45-59 of Reid '449, as a secondary reference, for disclosing the missing feature from Flores '109, that is, the status watching for detecting discontinuous or delay in the business process in order to arrive at Applicants' independent claims 5 and 12. Again, the reference to Reid '449 is misplaced. Neither Flores '109 nor Reid '449, whether taken in combination or individually, discloses the features of Applicants' claims 5 and 12.

Independent claims 5 and 12, as amended, define a workflow system connected to a plurality of client computers for executing business procedures each including a plurality of business processes, at least one of the business procedures being allowed to execute some of the related business processes simultaneously, as comprising, *inter alia*:

a **status watcher** for detecting a status change in a business process being executed, including an occurrence of an abnormal status change in the business process;

a **workflow engine** connected to the status watcher, for controlling the execution of each of the business procedures based on the status change

detected by the status watcher and predetermined business procedure definitions; and

a **notifier** for notifying at least one of said client computers of the occurrence of the abnormal status change detected by said status watcher, when the user of the client computer is in charge of a business process interdependent to a business process in which the abnormal status change was detected, so as to prevent the user from executing the interdependent business process.

As defined by Applicants' independent claims 5 and 12, when one of a plurality of related (or interdependent) business processes is discontinued or canceled (abnormal status change) while some of the plurality of related business processes are being executed simultaneously, it is possible to prevent relevant users from executing unnecessary or useless business processes by way of a notifier for notifying the relevant users of the occurrence of the discontinuance or interruption detected in the related business process.

In contrast to Applicants' claims 5 and 12, Flores '109, as a primary reference, simply describes a workflow system which manages business processes made up of many workflows that are linked together as described previously. There is **no** disclosure of any status watcher for detecting a status change in a business process being executed, including an occurrence of an abnormal status change in the business process, nor any notifier used for notifying at least one of the client computers of the occurrence of the abnormal status change detected by the status watcher.

Nevertheless, the Examiner argues that an observer as described by Flores '109 corresponds to Applicants' claimed "status watcher" as "they both detect status change in the business process executed" and that "it would have been obvious for

Flores '109 to notify the user of an abnormal (or discontinuous) status change" based on the teachings of Reid '449.

However, the "observer" as expressly defined on column 4, lines 30-35 of Flores '109 as "a role in a workflow who cannot perform acts in the workflow, but is informed of acts in the workflow, and has access to the information and data associated with the workflow." Based on this definition, the observer as disclosed by Flores '109 does **not** correspond to Applicants' claimed "status watcher" as the "status watcher" relates to the "notifier for notifying at least one of the client computers of the occurrence of the abnormal status change detected by the status watcher, the user of the client being in charge of a business process interdependent to a business process in which the abnormal status change was detected." Reid '449, as a secondary reference, does **not** remedy the noted deficiencies of Flores '109 for the same reasons discussed above.

In view of the foregoing explanations and arguments, both Flores '109 and Reid '449 fail to disclose and suggest Applicants' claims 1-2, 4-7 and 8-16. Therefore, Applicants respectfully request that the rejection of claims 1-2, 4-7 and 8-16 be withdrawn.

II. Traversal to Examiner's responses stated on pages 2-7, Paper No. 13

On page 2, Paper No. 13, paragraph 2(1), the Examiner acknowledges Applicants' argument that Flores '109 "does not intend to perform a plurality of interdependent business process simultaneously in a business processor and to prevent relevant users from executing useless business processes when one of

related business processes is discontinued or interrupted". However, the Examiner asserts that Applicants' claim 1 merely states "notifying a client computer corresponding to a selected user of the occurrence of a status change in the related business process", and does not state that "the notification refers to the interdependent business processes performed simultaneously." According to the Examiner, the reference to "the interdependent business processes performed simultaneously" is made in the preamble, and **not** in the body of the claim.

This assertion is unfounded. The Examiner has interpreted individual limitations of Applicants' claim 1 in isolation while ignoring their interrelationships and connections as a whole. Independent claim 1, as previously pending, makes specific reference to "the interdependent business processes performed simultaneously" in both the preamble as well as the body of the claim. Specifically, claim 1 defines, *inter alia*, the step of:

"previously defining status changes to be detected in business processes when a plurality of related business processes are executed simultaneously by said client computers"

Of course, when the related business processes that are executed simultaneously, an abnormal status change is detected and then notified. Such notification does, in fact, relate to and make reference to the earlier step where the "interdependent business processes [are] performed simultaneously."

For purposes of expedition, Applicants' claim 1 has been amended to clarify that "status changes to be detected in related business processes which are allowed to be executed simultaneously with each other by said client computers".

On page 3, Paper No. 13, the same paragraph 2(1), The Examiner further argues that Flores '109 discloses that the processes can execute simultaneously. In support of this argument, the Examiner cites column 2, lines 33-62, and FIG. 1 of Flores '109 for disclosing "parallel workflows". According to the Examiner, "there is no difference between simultaneously executing workflows, or business processes as disclosed by the applicant, and parallel workflows as disclosed by Flores et al."

However, the cited column 2, lines 33-62 and FIG. 1 of Flores '109 simply refer to the use of three types of workflows in a business process man [sic, map], including: "conditional workflows 13 and 15", "parallel workflows 19 and 21" and "serial workflows 23 and 25".

As shown in FIG. 1, PARALLEL #1 and PARALLEL #2 represent "parallel workflows" of two salesmen allowed parallel activity. In this situation, PARALLEL #1 and PARALLEL #2 have no interdependent relation with each other. For example, if a salesman of PARALLEL #1 stops the sale or failed in selling, this result has no influence on the workflow PARALLEL #2. As a result, and in contrast to the Examiner's assertion, Flores '109 does **not** teach related business processes that are desired to stop the execution of one of the related business processes when abnormality is detected in another one of related business processes.

On page 3, Paper No. 13, the same paragraph 2(1), the Examiner further characterizes that column 4, lines 30-34 of Flores '109 discloses that "an observer may be a client computer or manager as they are 'selected users who are in charge of a business process.'"

However, the Examiner's characterization is factually flawed. Column 4, lines 30-35 of Flores '109 specifically describes an "observer" as:

"A role in a workflow who cannot perform acts in the workflow, but is informed of acts in the workflow, and has access to the information and data associated with the workflow."

In addition, on column 2, lines 31-32 of Flores '109, observers of workflows are simply observers who observe for management or training purposes.

The observer as disclosed by Flores '109 simply does **not** correspond to Applicants' claimed "selected user [client computer] who is in charge of a business process" and certainly can execute a business process or act in the workflow as expressly defined in Applicants' claim 1.

On page 3, Paper No. 13, the same paragraph 2(1), the Examiner also characterizes that column 13, lines 39-56 of Flores '109 allegedly discloses that "notification of the status occurs." Again, the Examiner's characterization is incorrect.

Column 13, lines 39-67 of Flores '109, discloses that,

"The follow-up manager runs periodically, scheduled per workflow server administration tables in the administration/configuration database. It can run asynchronously to the transaction manager. It determines when notifications, either follow up or reminders, are to be sent and sends them.

The follow-up manager detects transaction in which a participant has an overdue commitment and, depending on the workflow definition stored in the definition database, will execute a script, send a mail message, or take other actions that are defined. The follow-up manager interacts with a Workflow Incompletion Transaction class which is part of the transaction database, which furnishes follow up and reminder times, in order to select workflows requiring notification".

Again, the cited column 13, lines 39-67 of Flores '109 describes that the follow up manager can notify the transaction manager by sending an e-mail, executing a script, or other defined actions. However, the follow up e-mail as described by Flores '109 must be destined to a user having an overdue commitment or the observer having a duty of management on the workflow jobs. These actions are carried out to promote the execution of the delayed business process.

Nowhere in the cited column 13, lines 39-67 or anywhere else in Flores '109 is there reference to Applicants' claimed "notifying a client computer corresponding to a selected user of the occurrence of a status change (abnormality) in the related business process" as expressly defined in Applicants' claim 1.

On page 3, Paper No. 13, the same paragraph 2(1), the Examiner further characterizes that column 11, lines 31-67 and column 19, lines 16-50 of Flores '109 allegedly discloses that "the client computer is notified of the occurrence of a status change in the related business/workflow process." Again, the Examiner's characterization is factually flawed.

The cited column 11, lines 31-67 of Flores '109 merely shows the control flow of the transaction manager to be executed when a new business process or workflow is initiated (FIG. 4A) and the control flow of the transaction manager to be executed when a user has taken an act in a workflow (FIG. 4B). Nowhere in the cited column 11, lines 31-67 or anywhere else in Flores '109 is there any reference to the control flow to be executed when abnormal status change is detected in one of related business processes which are allowed to be executed simultaneously with each other as defined in Applicants' claim 1.

On page 4, Paper No. 13, paragraph 2(2), the Examiner characterizes that column 6, lines 46-59 of Reid '449, as a secondary reference, discloses "an unexpected status occurring as a result of an error" and then argues that the "status information of the software or hardware component is the status of a business process."

Again, the Examiner's characterization is improper. The cited column 6, lines 46-59 of Reid '449 simply refers to an electrical distribution system provided with the ability to monitor remotely controlled circuit breakers to correct problems by using a microprocessor 72 when a circuit breaker is in a wrong status.

In contrast to Reid '449, the purposes of Applicants' disclosed invention is to prevent a user from executing a business process interdependent to another business process when abnormal status change was detected in the latter, and not to correct or restore the wrong status in a workflow system.

No where in the cited portion or any where else in Reid '449 is there any reference to a system in which a normal device (client computer) is notified of the occurrence of abnormality detected in another related device (client computer) in order to prevent the normal device from executing an operation (interdependent business process) even if the device can operate normally.

The law under 35 U.S.C. §103 is well settled that "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." ACS Hospital System, Inc v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The Examiner must point to something

in either Reid '449 or Flores '109 that suggests an artisan to incorporate Reid '449 in to the workflow system of Flores '109 in order to arrive at Applicants' claimed invention. Absent such a showing, the Examiner has improperly used Applicants' disclosure as an instruction book on how to reconstruct to the prior art to arrive at Applicants' claimed invention.

In the present situation, both Flores '109 and Reid '449 fails to disclose and suggest Applicants' claims 1-2, 4-6 and 8-16. Therefore, Applicants respectfully request that the rejection of claims 1-2, 4-6 and 8-16 be withdrawn.

Claims 17-20 have been newly added to alternatively define Applicants' disclosed invention over the prior art of record. These claims are believed to be allowable at least for the same reasons discussed against all the outstanding rejections of the instant application.

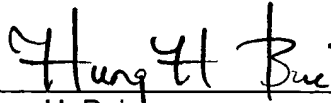
In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC area office at (703) 312-6600.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135, and please credit any excess fees to such deposit account.

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Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

Respectfully submitted,
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A handwritten signature in black ink, reading "Hung H. Bui", written over a horizontal line.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please **amend** claims 1, 5 and 12, and **add** claims 17-20, as follows:

- 1. (Twice Amended)** A workflow control method in a workflow system connected to a plurality of client computers for carrying out business procedures each comprising a plurality of related business processes, at least one of the business procedures being allowed to execute some of the related business processes simultaneously, said workflow control method comprising the steps of:
- previously defining status changes to be detected in related business processes ~~when a plurality of related business processes~~ which are allowed to be executed simultaneously with each other by said client computers;
 - detecting an occurrence of an abnormal status change in one of the plurality of related business processes;
 - selecting at least one user who is in charge of a business process interdependent to the business process in which the abnormal status change was detected; and
 - notifying a client computer corresponding to a selected user of the occurrence of abnormality in the related business process so as to prevent the selected user from executing the interdependent business process.

5. (Twice Amended) A workflow system connected to a plurality of client computers for executing business procedures each including a plurality of related business processes, at least one of the business procedures being allowed to execute some of the related business processes simultaneously, comprising:

a status watcher for detecting a status change in a business process being executed, including an occurrence of an abnormal status change in the business process;

a workflow engine connected to the status watcher, for controlling the execution of each of the business procedures based on the status change detected by the status watcher and predetermined business procedure definitions; and

a notifier for notifying at least one of the client computers of the occurrence of the abnormal status change detected by the status watcher, when the user of the client computer ~~being~~is in charge of a business process interdependent to a business process in which the abnormal status change was detected, so as to prevent the user from executing the interdependent business process.

12. (Amended) A workflow management system for controlling an order of execution of business procedures each including a plurality of related business processes and at least one business procedure being allowed to execute some of the related business processes simultaneously, said workflow management system comprising:

a client application to be executed by one or more client computers;

a server application to be executed by a server computer for communicating with the client application;

an application database for storing data for the server application;

a status watcher for detecting a status change in a business process being executed in the application database, including an occurrence of a discontinuance in a business process;

a workflow engine for controlling the execution of each of the business procedures based on the status change detected by the status watcher and predetermined business procedure definitions; and

a notifier for notifying the occurrence of a discontinuance in the business process to at least one of the client computers, when a user of the client computer is in charge of a business process interdependent to the business process in which the discontinuance was detected, so as to prevent the user from executing the interdependent business process.

--17. A workflow management system connected to a plurality of client computers for controlling an order of execution of business procedures each including a plurality of related business processes and at least one business procedure being allowed to execute some of the related business processes simultaneously, said workflow management system comprising:

means for defining status changes to be detected in related business processes which are allowed to be executed simultaneously with each other by the client computers;

a status watcher configured to detect a status change in a business process being executed, including an occurrence of a discontinuance in a business process, among the related business processes executed simultaneously;

a workflow engine configured to control the execution of each of the business procedures based on the status change detected by the status watcher and predetermined business procedure definitions; and

a notifier configured to notify the occurrence of a discontinuance in the business process to at least one of the client computers, when a user of the client computer is in charge of a business process interdependent to the business process in which the discontinuance was detected, so as to prevent the user from executing the interdependent business process.

18. The workflow management system according to claim 17, further comprising a resource selector configured to receive an instruction and an identifier of the business process on which the discontinuance was detected from the workflow engine, and select the client computer to be notified of the discontinuance by referring predetermined rules previously defining the relation between predetermined business procedures and client computers.

19. The workflow management system according to claim 18, wherein the status watcher, the workflow engine, the notifier and the resource selector are individual programs executed concurrently to control the execution of each of the business procedures.

20. The workflow management system according to claim 17, further comprising an exception handler unit configured to create attributes to handle the discontinuance of the business process detected by the status watcher; and a user retrieval unit configured to select the user of the client computer who is in charge of a business process interdependent to the business process in which the discontinuance was detected by the status watcher.